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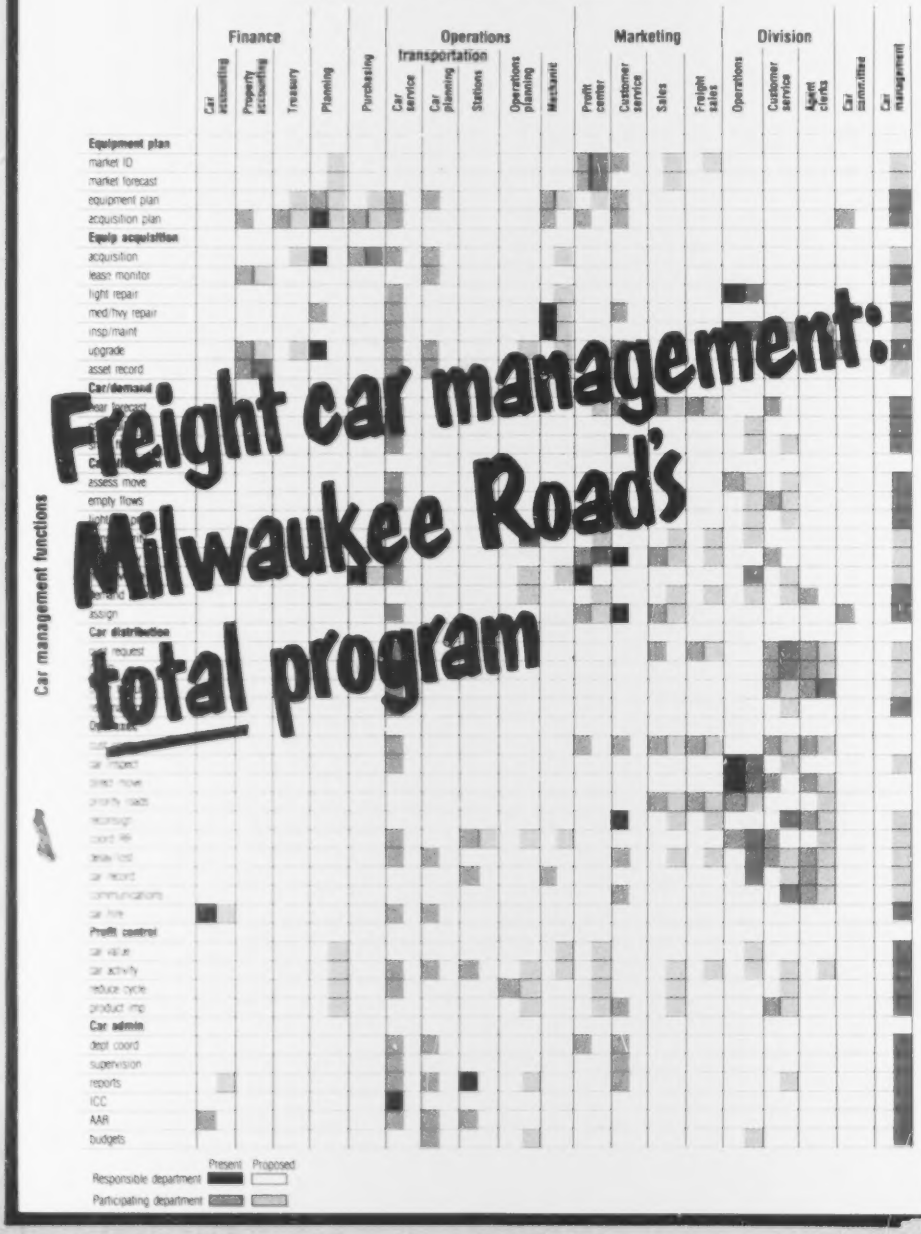
Chemicals: As traffic grows, so does the emphasis on safety

August 25, 1980

RAILWAY AGE

Car management functions and departmental involvement



Freight car management: Milwaukee Road's total program

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Inside

LUTHER S. MILLER

DOG DAYS TO REMEMBER

The dog days, which fall in that sultry period between early July and early September, are traditionally marked by "dull lack of progress," according to our office lexicon. For railroads, the dog days of 1980 will be long and painfully remembered. They have been marked by a quite remarkable lack of progress, though they could hardly be called dull.

First came a startling setback in the U.S. House of Representatives on July 24. On that day a painstakingly put together railroad deregulation package—the fragile product of many months of give-and-take negotiation among the interested parties—was busted wide open by the House's unexpected acceptance of the so-called Eckhardt Amendment, a utilities-inspired maneuver to hold down coal rates. Lobbyists supporting the deregulation bill had thought that the Texas Congressman's explosively controversial contribution to the legislation was safely dead and buried. It wasn't, as the House proved by a 204 to 197 vote following a furious lobbying effort by the utilities.

Railroad lobbyists, caught napping as Eckhardt pulled the switch, were still conducting their post mortems when another bomb went off—this time at the ICC. By a vote of 5 to 2 on Aug. 13, the commission ordered an end to collective ratemaking by the railroads, effective Oct. 12. The first reaction of some railroad people to this news was, "Somebody's made a mistake. They can't do it. The Reed-Bulwinkle Act of 1948 gives us antitrust immunity in setting rates." But the ICC *could* do it. What the Reed-Bulwinkle Act did was give the ICC discretionary authority to immunize the railroads against the antitrust statutes—and the commission has now exercised its discretion to end the practice. (For initial railroad reaction, see the news story on p. 8.)

The ICC said it was halting collective ratemaking in order to give shippers additional price and service options. But there was some evidence that all shippers might not be ecstatic with these options. M. J. Fiocco, a spokesperson for the National Industrial Traffic League, was quoted as saying: "Some shippers have valued the orderliness and stability in pricing brought about by the three major rate bureaus, and without that familiar system many of them will have to expand their shipping offices to keep track of the many different prices that would vary with each railroad."

NOT ANTIPASSENGER—JUST PROFREIGHT

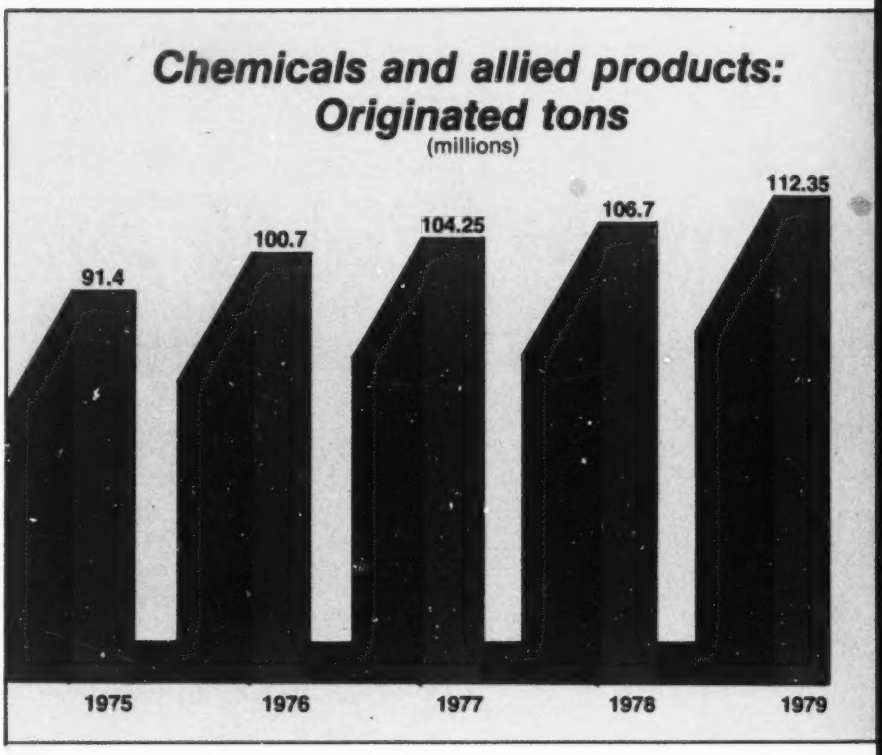
In this space July 28, we took strong exception to the arguments advanced by Henry Fairlie, a syndicated columnist, advocating the nationalization of U.S. railroads. Mr. Fairlie, you may recall, was advancing the notion that we could have the same fine passenger service that he has found in Europe if only our railroads were brought under public ownership. In reply, we made the point, among others, that Amtrak *had* been brought under public ownership for all practical purposes, and it had not so far been demonstrated that the government could run passenger trains more successfully than private enterprise. What, we wondered, would be the effect on freight service if government took *that* over?

Some readers have interpreted this column as an attack on Amtrak. It was not intended to be. The only question we raised was whether it would really do a whole lot of good for 300 passenger trains if we nationalized 10,000 freight trains. We stand by that question—and its implicit answer.

Commodities by rail

Chemicals As traffic grows, so does

By FRANK MALONE
Associate Editor



Chemicals traffic is big business for the railroads, and it's going to get bigger. Originated tonnage of chemicals and allied products increased 23% from 1975 through 1979. While tonnage through July of this year was down from the year-earlier level, it wasn't down as much as rail traffic as a whole. This year's slump is viewed as just a temporary dip in a growth pattern expected to resume its steady course early next year.

There is no such slowdown in the emphasis on safety. There can't be: As much as 75% of chemicals and allied products traffic is considered in some way hazardous, says the Association of American Railroads.

That means that any discussion of moving chemicals by train must start, proceed, and end on the same note—safety. For no other class of commodities important to railroad revenue does safety in transport weigh so heavily on the minds of carriers and their customers alike. For no other class, perhaps because of that safety factor, does their mutual understanding seem so strong—and it extends beyond safety to service concerns.

Both railroaders and shippers seem to understand that the rail mode is a lot safer than the general public might think, despite nationally publicized evacuations such as that of Muldraugh, Ky., on July 26, where a train derailment caused one tank car of vinyl chloride to explode and another to catch fire. Railroads and their users are familiar with statistics that show Muldraugh clearly as an exception. Both sides, however, are quick to declare that those figures, good as they may be, are no cause for contentment.

After citing the outstanding safety record of his own railroad, the biggest chemicals hauler in the U.S., James W. Gessner, Missouri Pacific president and chief executive officer, says: "I take no comfort from these statistics. I certainly find in them no justification for complacency. A single injury, a single death, a single hazardous materials derailment is one too many."

● **What lingers.** The memory of fireballs and deaths caused by accidents involving hazardous materials is, of course, what lingers longest in the minds of the public and the news media. Three of the most vivid memories are from the 1970s:

—Seven railroad employees died at Decatur, Ill., in July 1974 when a tank car of liquid petroleum gas exploded after being punctured in a Norfolk & Western switching accident.

—Twelve persons, mostly cleanup-contractor employees, died in January 1978 at Waverly, Tenn., when a tank car of liquid petroleum gas exploded—several days after a Louisville & Nashville derailment.

—Eight persons died in February 1978 near Youngstown, Fla., when tank cars leaked chlorine after a derailment on the Atlanta & St. Andrews Bay.

Those three incidents alone accounted for 70% of the 39 deaths caused by train accidents involving hazardous materials through the entire decade, which ended well with no such fatalities in 1979. Through mid-August of this year, there were two. Both were train crew members who died from exposure to anhydrous ammonia, after a Burlington Northern derailment caused by a mudslide near Richland, Wash., in January.

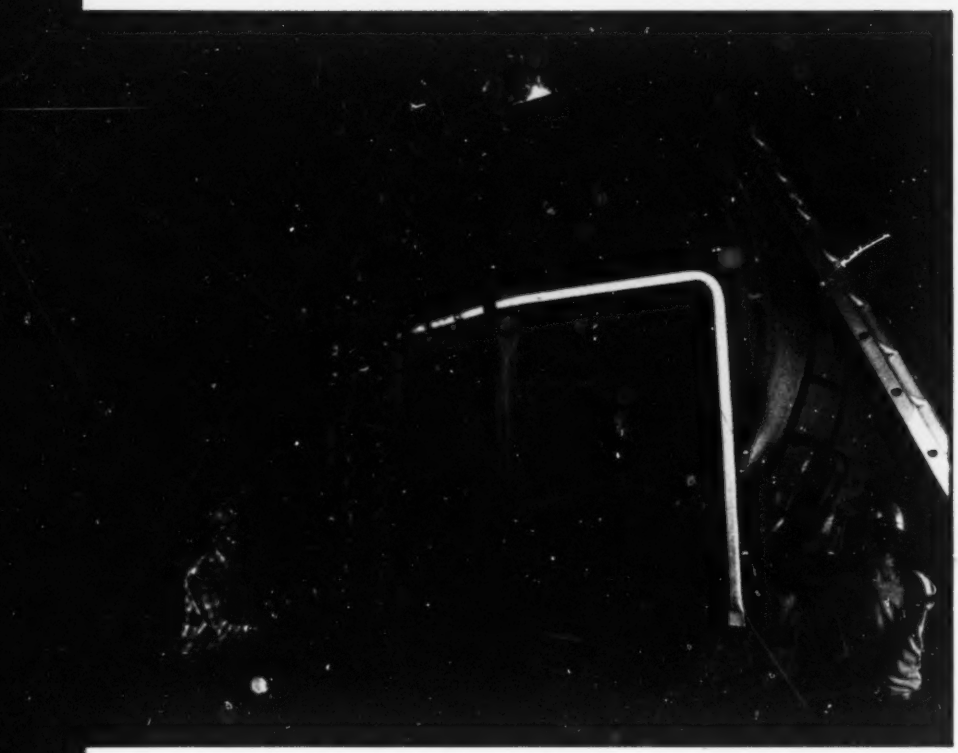
As in the Richland incident, none of the major tragedies of the '70s was caused by bad track, though track quickly became the news media's primary suspect. Within the industry—carriers, shippers, and suppliers—attention centered on equipment, that is, on what could be done to make tank cars less prone to puncture, regardless of a mishap's cause.

While the industry has worked on one of the greatest cooperative efforts ever undertaken, the retrofitting of certain classes of tank cars with puncture- and fire-preventing components, the railroads have maintained their role as reliable transporters of chemicals. That means they haul about 70% of the hazardous tonnage handled by all modes, amounting to more than a million such carloads each year.

● **A look at the record.** Just how are they doing, in terms of safety? One of the best observers of their performance is the nonrailroad emergency response organization known as CHEMTREC, the chemical transportation emergency center in Washington, D.C. Round-the-clock communicators provide guidance for on-the-scene rail, fire, police, and government personnel anywhere, anytime. The shipper-sponsored service's director is John C. Zercher, who says the frequency of rail incidents involving hazardous materials shows no alarming trend.

Zercher says "incidents" reported to his agency include everything from a leaking tank car valve to an evacuation-caus-

the emphasis on safety



ing derailment. Through June, CHEMTREC registered 560 rail incidents. They comprised 43% of all transport incidents reported, though rails handle nearly three-fourths of all hazardous materials. That rail-incident percentage, Zercher says, has not wavered more than two points since CHEMTREC began monitoring in 1971.

Ten to 20 rail incidents each year are considered major, and that category includes situations where evacuations are precautionary only, and where there is no loss of life nor limb. "Frankly, it is a subjective evaluation," Zercher says. So is the definition of incident: "We are mixing apples, oranges, hogs, pigs, just counting the number of times the phone rings."

Another nonrailroad source is the National Transportation Safety Board, whose statistician, Ludwig Benner, uses data provided by a sister Transportation Department agency, the Materials Transportation Bureau. Benner says that, despite three major rail accidents, the 1977 through 1979 period shows railroads with well under half as many hazmat-related deaths as those occurring on highways. In that period, there were 62 highway deaths and 27 rail; 1,787 highway injuries and 933 rail.

A less disinterested observer is William H. Dempsey, Association of American Railroads president, who looks at rail performance in terms of release or loss of hazardous product. What he sees is a derailment/product loss ratio of *less than one sixth of one percent*. In 1978, for example, 151 hazardous materials carloads, out of 1.1 million handled, lost lading as a result of derailment. Joseph Walsh, Federal Railroad Administration associate administrator for safety, says the most recent 1980 railroad accident statistics show a steady low ratio of dangerous-products loss.

● **Probing the problem.** But 1978 was the year of Waverly and Youngstown, and the concern caused by those tragedies produced the Inter-Industry Task Force on Rail Transportation of Hazardous Materials, probably the single most important shipper-carrier-supplier group ever formed. Hard-nosed subcommittees went to work on equipment design, accident response, systems safety analysis, and transportation.

A final report issued in mid-1979 included this assessment of rail performance: "It appears that about 35% of all freight trains contain hazardous materials. Only about 7.5% of all accidents, however, involve trains carrying hazardous materials and only 1% of all accidents involve a release of hazardous materials. . . .The number of major accidents, that is, involving a release and resulting in a fatality or over $500,000 damage, varies from zero to five per year. Compared with some other transportation safety problems, this represents a relatively good safety performance."

The Task Force's primary objective was tank car retrofitting, something railroads and suppliers had already been pursuing. As a result of what AAR's Dempsey calls "one of the most massive research efforts ever funded by private industry," all Class 112 and 114 tank cars (not insulated) now have shelf couplers, with heavy steel plates (shelves) above and below, to reduce the chance of uncoupling and puncture in a derailment. Many cars also have (1) head shields, heavy steel plates on each end, to absorb impact and prevent puncture; (2) thermal shields, special insulation and steel jacketing, to insulate cars carrying pressurized or flammable materials from fires; and (3) stronger steel cradles supporting tanks on car frame and undercarriage.

● **Protective action.** Ironically, shelf couplers were developed and ready for installation three years before the U.S. Transportation Department would allow their use. In July 1978, the Materials Transportation Bureau ordered such couplers installed according to a faster schedule than the bureau itself had previously issued. It also ordered a speeded-up retrofit of head shields.

Just as the devices themselves showed what private industry could do, their accelerated installation showed even more. At first, there was doubt that manufacturers could deliver enough new couplers to meet the new deadline, Dec. 31, 1978. There was also doubt that car owners could find adequate repair facilities for the retrofitting. The Task Force, however, supported the MTB order as a prudent safety measure, and its final report tells how industry coped:

"The subcommittee on equipment, design, and maintenance completed a comprehensive survey of shelf coupler manufacturing capabilities, approved repair facilities that could perform the change-outs, and the location of the major concentration of 112/114 cars requiring coupler retrofit. Efforts were made to get shelf couplers to appropriate repair facili-

Cooperation on safety between railroads, car owners, car builders, and hazmat shippers has reached a new high.

ties. All owners/operators of 112/114 cars were notified about capabilities, capacities, work load, availability of suitably located repair facilities, and means of initiating activity of each shop.

"Railroads participated by making repair facilities available, especially repair tracks; by sharing supplies of shelf couplers; and by moving cars to repair facilities as required to meet schedules.

"With respect to head and thermal protection, the subcommittee developed information on suitably located repair shops capable of performing the required work, determined capacity of each shop, and forwarded the information to shipper associations and owners of Class 112/114 cars."

Those efforts resulted not only in on-time installation of new couplers but of head shields for cars requiring such shields only (Dec. 31, 1979 deadline). For cars requiring thermal protection as well, a Dec. 31, 1980 deadline is almost met already.

● **A special case.** As for another type of tank car, the 105, the extent of retrofitting, if any, remains to be determined. These are insulated cars (four inches of fiberglass around the tank shell) that carry liquefied compressed gases. They also have steel protective jackets, though not as thick or protective as the head shields required on modified 112 and 114 cars. Just how effective the 105 protection is will be known next year, upon completion of a study by the Federal Railroad Administration and the Railway Progress Institute-Association of American Railroads tank car safety test and research project.

Meanwhile, however, the federal government may not have waited to impose more-protective requirements for 105's. The Materials Transportation Bureau July 21 initiated a rulemaking proceding that may lead to retrofitting of 105 cars "to meet the puncture and thermal protection levels currently required for DOT Specification 112 and 114 tanks cars." The bureau is also considering new requirements for other cars carrying the same hazardous materials as do the 105's (*RA*, Aug. 11, p. 10).

The week that began with *Federal Register* notice of the proposed rulemaking ended with the Muldraugh, Ky., incident. An Illinois Central Gulf derailment included six tank cars of vinyl chloride and one of chlorine. The two chloride cars that burned caused evacuation of approximately 7,000 people, of whom about 2,000 did not return home until late on July 30.

No one was killed. No one was hurt except a train crew member, and his injury was minor. No local property was damaged (ICG Aug. 4 opened a claims office at the Muldraugh city hall to handle evacuation-related costs). Though spectacular at first, the accident was in no way a "catastrophe," as Hugh Downs called it during the July 31 version of American Broadcasting Co.'s "20/20" television program. The fact that it wasn't may well be due largely to the tank car retrofit effort.

● **Cooperative measures.** Another major effort of the Task Force equipment subcommittee was directed toward better inspection and maintenance procedures. It included formation of an "ad hoc" group of mechanical officers from railroads, nonrailroad owners of cars, and major carbuilders. The objective was better communication for improved condition of rolling stock.

The subcommittee developed procedures for safety improvement in these areas: tank and valve safety retests, pretrip inspection of tank cars, greater attention to running gear, securement of empties for return trips, development of audiovisual aids for "hazmat" handling and car inspection/repair, quality of contract repairs, use of AAR Mechanical Division publications, and more effective planning of repair programs with inspections to establish repair priorities.

"During the progress of this work, the cooperative exchange developed among the railroads, car owners, car builders, and shippers of hazardous materials has reached a level not achieved in the past," says the Task Force report. The "ad hoc" mechanical officers' group known as the mechanical officers liaison committee has remained active following dissolution of the Task Force; its most recent meeting was July 25 in Chicago. Cochairmen are Robert E. Wilson, Stauffer Chemical Co. director of transportation operations, and Hobart L. Scott, Jr., Norfolk & Western general manager-motive power and equipment. They agree that the group's chief virtue is its free and open discussion of problems. The July 25 discussion included FRA regulations, AAR interchange rules, shipper/railroad car inspections, and better use of CHEMTREC.

● **CHEMTREC's role.** Also promoting better—in the sense of faster—use of CHEMTREC is, not surprisingly, John Zercher. "We're trying to persuade the railroads to put us higher up on the list. Our members want to be there if they've got a car down, because they think they've got something to offer." Conceding that train dispatchers and related officers already have a long list of names to call when a serious derailment occurs, Zercher nonetheless thinks they can contact CHEMTREC sooner than they might think.

Despite that concern, however, Zercher sees carriers and shippers working together more and more closely in emergency response activities. One big element is a workshop program for shippers on emergency response, and, he says, "the railroads are cooperating on this not just by providing input but by attending, even though the workshops are oriented primarily to chemicals people."

Supporting the shipper-education effort is a CHEMTREC steering committee including representatives of Dow, Du Pont, Shell Oil, PPG Industries, Chevron, and Union Carbide. Attending the committee's July 16 meeting were members of another steering committee, that of the AAR's Bureau of Explosives. "We may complain to each other, sure, but the fact that we get together is one of the most positive signs you can find," Zercher says.

The Bureau of Explosives' field staff of 19 inspectors in the U.S. and Canada concentrates on safety audits of rail facilities and of production/shipping sites of more than 500 member plants. They also help railroad personnel handle derailed carloads of hazardous commodities. The BofE's director is Tom Phemister, who recently has been involved in an area of carrier/shipper disagreement, a dispute over on-train identification of commodity.

● **Which identification code?** For fast determination of a commodity's hazard-degree and proper reaction, the rail industry relies on a refinement of its standard transportation commodity code (STCC). The code now includes "49-series" numbers that identify hazardous materials and rank them according to primary, secondary, and tertiary levels of danger. This identification is part of all shipper papers on trains, primarily waybills, with which conductors must familiarize themselves each trip. The STCC number can be quickly referenced in a red-cover manual that is standard train-crew equipment, the BofE's *Emergency Handling of Hazardous Materials in Surface Transportation*. Currently being updated, the manual is also widely circulated among shippers and local authorities.

The DOT's MTB, however, wants something a little different, namely a four-digit number on cars of "hazmat," separate from their required warning placards and on shipping papers as well. Known as the United Nations Code, the MTB-proposed addition would not be commodity-specific but would lump groups of materials under a number for reference to a

common page within an MTB emergency guide book.

Phemister says the guide would be subject to misuse if numbers were transposed. Though that can happen with any numeric system, it seems a greater liability for a system with no "internal logic," that is, where numbers represent nothing specific but merely point to an index. A final hearing on the proposal took place in Washington July 31, and a ruling was expected by mid-September.

A compromise was expected, including, among other things, addition of the UN number. But railroads likely will make little use of it; as Phemister says, "The STCC number does so much more for us than this ever could, and it is not confusing like this one is."

● **Changeable signs.** What Phemister would really like to see is identification of commodity by name on the placard, which shippers oppose because they see higher labor costs from the placard-changing needed for the approximately 16% of cars whose contents ever change. The rest either carry the same commodity all the time or already carry a product name.

Placard-naming of commodities caught the fancy of Geraldo Rivera, reporter for the June 3 ABC "20/20" tv program (*RA*, June 30, p. 46). That show elicited a strong response from the AAR, which was broadcast July 31 along with the Downs "catastrophe" phrase. The following dialogue was left out of Rivera's report.

Rivera: "What system would you advocate whereby those emergency services people would know precisely what was inside a car that was in distress?"

Phemister: "The painting of the name of the commodity on the outside of the car or the writing of the name of the commodity on the placard."

Rivera: "Who would object to that? It seems eminently reasonable."

Eminently unreasonable, according to AAR officers, was Rivera's lopsided approach allowing no credit for shipper/railroad efforts toward reducing risks of "hazmat" transport. The issue of on-train identification represents no serious rift in the steadily improving carrier-customer relationship. It represents, rather, a continuing search for the most effective emergency response, an area where much progress is already evident.

● **Action at a spill.** "The railroads and the communities they serve have, by and large, enjoyed superb cooperation during emergency situations from the shippers of hazardous materials," says AAR's Dempsey, citing CHEMTREC as the best example. That organization can produce quick response from other organizations representing specific commodities such as CHLOREP for chlorine producers, as well as from shippers with sophisticated emergency teams, such as Dow Chemical.

While praising, Dempsey cites a potential problem: "In today's litigation-prone society there is some fear that voluntary actions could lead to potential legal liability. One way to encourage all concerned—shippers, carriers, CHEMTREC, the Bureau of Explosives, and others—to continue to provide their very beneficial services is to grant such volunteers protection from litigation. Often termed 'good samaritan laws,' there are plans and model acts that should be considered for adoption on a nationwide basis."

Regardless, however, of which shippers are at the scene, there's broad agreement that the individual in charge is the senior railroad official. That person knows the railroad environment intimately and how to get the outside expertise needed. The railroad has primary fiscal and legal responsibility and thus the greatest incentive to make the right decisions.

"History shows that when anyone else steps in, more often than not decisions are made which are not the best," Dempsey says. "Experience also shows that senior railroad officials have made the right decisions almost always and that there is no demonstrable need to alter the present system. The railroad's role as a common carrier means that, at least initially, it is responsible for the cars and commodities damaged. This unique legal status does *not* determine third-party rights or liabilities, and it exists as a means of effecting the restoration of vital transportation services. Any change in this role must be seriously examined in order not to disrupt the nation's rail network."

● **Help for the locals.** Also at the scene, of course, are local fire and police officials who may be encountering their first "hazmat" situation. For such local personnel, the Inter-Industry Task Force created a training program expected to include about 250,000 volunteer firemen by early 1981. Called "Recognizing and Identifying Hazardous Materials," the program shows how to find shipping documents and use them to identify products, and then how to use emergency resources such as CHEMTREC.

"Paradoxically," Dempsey says, "the fact that the program is being offered free has been one of its stumbling blocks. Fire fighters long accustomed to the blandishments of emergency response course salesmen have a hard time believing there is no charge."

Also helping local officials at the scene of an accident involving "hazmat" may be train crew members on several railroads that now supply computer-generated consists describing every dangerous load on the train. Located both in locomotive cab and in caboose, printouts list each load by car number and position in the train. There are instructions for handling spills and fires, personnel safety, evacuation, and environmental protection. With some "seed" money from the FRA, Missouri Pacific pioneered this practice about five years ago.

Dow: "Rails have a

If railroaders have any doubts about their role in chemicals transportation, Dow Chemical is ready to dispel them. The company is dedicated to the rail mode—to making it safer, more efficient, more available, and thus more profitable. Dow officers see nothing but good track times ahead, if railroads do some doubt-dispelling themselves.

The main doubt is about rails' readiness, not about their opportunities. "I've been telling railroad people that I see a bright future for them if they can capitalize on the opportunities," says William A. Rose, Dow manager of distribution. "Their fuel costs are going to increase less rapidly in relation to those of other modes. It looks to me like the rails have a good chance of cutting back into truck markets and even into some marine markets."

But Dow itself is making sure of its own readiness, and that means involvement with the rail mode in nearly every aspect except running trains. Every year the company ships more than 4 million tons of its products by rail—about a third of Dow USA's total output. Dow's fleet now totals nearly 8,500 cars, half owned, the other half leased. Replacement value is almost $480 million. Dow spends more than $150 million a year for rail transportation, including a Dow unit train that runs regularly between Texas and Midland, Mich.

"This sizable investment calls for a corresponding commitment to its careful management, and we've made such a commitment," says Thomas D. Seeley, manager-rail fleet administration. "We believe in active management of our fleet, not only to ensure effective use of our investment but also to make certain that our products are being shipped as safely as possible. We believe the rail mode is the safest."

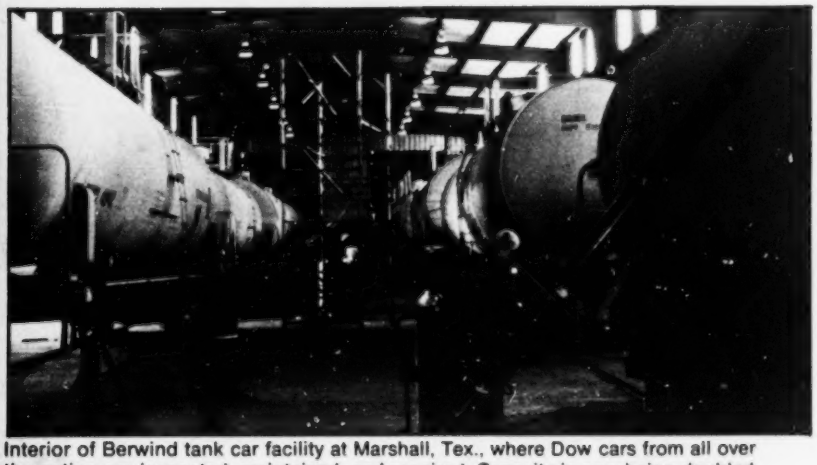
● **Exclusive car-servicing.** Regarding safety, however, Dow is taking nothing for granted: In 1977 it signed a contract with Berwind Railway Service Co., the first such contract by an industrial company, for exclusive maintenance of Dow cars at a Marshall, Tex., facility designed for tank cars. Capacity is now being doubled.

Located on a Missouri Pacific line, the Marshall shop handles Dow cars from

Because of its strategic position in Texas and neighboring states, MoPac now reports chemicals are its biggest commodity, accounting for 26% of revenue ton-miles. Yet the last hazardous materials-related death on the railroad occurred about 10 years ago, when a spectator was killed after refusing to leave a derailment site.

"The ability to marshall skilled personnel quickly and the cooperative efforts of parties involved have enabled us to keep damage and loss from hazardous materials incidents to a minimum on our railroad," says James Gessner. But just as Gessner finds little comfort in favorable safety statistics he finds little in effective response programs.

good chance of cutting back into truck and marine markets."



Interior of Berwind tank car facility at Marshall, Tex., where Dow cars from all over the nation are inspected, maintained, and repaired. Capacity is now being doubled.

throughout the U.S., most of which carry products from three of the company's major divisions—Freeport, Tex., Plaquemine, La., and Midland, Mich. Berwind provides a full line of inspection, maintenance, and repair service.

Dow inspects cars before sending them to Marshall, to make sure any car that might have carried a dangerous commodity is clean. Berwind makes another inspection, to schedule work according to type needed, rather than on a first-in, first-out basis. An "advanced" two-track design and an overhead crane have helped reduce Dow cars' out-of-service time by 50%.

"The exclusive type of rail car servicing was a new experience for both Dow and Berwind," Seeley says, "so modest goals were set for a gradual phasing-in. We set a target of 250 cars for the first year, but actual performance exceeded even the most optimistic hopes. By the end of 1978, a little more than a year after opening, we'd put through 774 cars."

Safety also is a major topic of discussion with any of the 10 railroads that move Dow products. That includes emphasis on the safest routes, as Keith Bunting, general traffic manager, explains: "I think we're doing a better job of looking at the trackage that our shipments are moving on. We've been more concerned about picking our routing and the carrier that we do business with, largely on the basis of safety."

Dow rail observers are happy with their 1979 experience, the safest in many years, but a little concerned about 1980. Carrier-caused incidents (as opposed to incidents at Dow facilities) are up a little. The severity, in terms of damage to Dow equipment, however, is down.

● **The "positive" story.** In general, Dow officers agree that railroads don't really talk enough about how safe they are. "I think they tend to be defensive where they have a positive story to tell, and we're trying to encourage them to gear up and tell that story."

They also agree that their greatest concern is safety in railroad yards. "Statistics show that many of our accidents happen in switching operations, about 50-to-60%," Seeley says. "These seem to be more related to personnel than over-the-road types of accidents."

Earlier this year, seven new Dow cars moving toward a Texas plant for their first loads were derailed, with an estimated $28,000 damage to each. "That, of course, is what we bring to a carrier's attention as soon as possible," Bunting says. "I recently had a conversation with one of our major carriers that had five incidents in less than 30 days. We've recently had meetings with four or five others, and our major concern was this type of incident. Their managers are genuinely concerned, but we want to see that concern reach the operating levels."

Adds Rose: "Our division personnel have told us they're pleased with railroads' response at their meetings. Railroads are appropriately concerned, and we expect the trend to change."

Transit time is another thing Dow expects to see improve. The objective is 9 turns per car a year, compared with about 7.9 currently and 8.5 in 1978. That's already an improvement, but only a recent one: Dow averaged 10.5 turns in 1976. "Of course," Seeley says, "the 1980 'improvement' must be put in the context of less volume and more power available. The key is what's going to happen in the next business upturn."

● **Accident site authority.** Another rail observer at Dow is Lee R. Kiley, manager-distribution technical services. That includes the company's emergency response program, one of the most sophisticated in the chemicals industry. He emphasizes that Dow's role at an accident site is advisory only, that "cleanup" decisions are the railroad's. "There was a derailment in Mississippi this summer where a railroad spokesman was quoted as saying Dow 'had taken over.' We don't ever want to convey that impression. The person best qualified to 'take over' is the railroad official."

As for railroad spokesmen, Dow would like to see them take a more active role—right at the scene of a serious accident. Dow's emergency response team includes a public relations man, but Seeley says a railroad PR rep would be better qualified to deal with the overall situation. Some roads, L&N for one, agree.

Such areas of concern, however, are evidence of Dow's deepening involvement with the rail mode, an involvement stretching back to the days when the company was little more than a brominemaker. (*RA*, June 26, 1978, p. 26). Then, the company's second president, Willard Dow, wanted to incorporate and expand the minirailroad he had built around the brine wells at Midland, to ensure the company's supply of rail transport.

Willard Dow set the tone for an enduring relationship with railroads, one that now may well mean a greater share of Dow's traffic. As Manager-Distribution Rose says: "Because of energy costs, we're making very careful studies now in selecting modes. And we're going to have to do a lot more of it from now on." ■

He readily declares that the most effective effort of all must be preventive. In other words, sophisticated emergency response is somehow a reflection of a railroad's failure to avoid the need for such response in the first place.

"In the end," Gessner says, "it is the railroad that must undertake the kind of comprehensive program necessary to minimize the chance of such an incident happening at all."

● **MoPac's prevention program.** The Missouri Pacific is hardly alone in its emphasis on prevention, but its program is indeed comprehensive and a model for the industry. The first step, Gessner says, is to build a sound physical plant to reduce the number of accidents caused by defective track, locomotives, and cars (though most cars used for chemicals are owned or leased by shippers). However, that may be harder than it sounds: "I found a high degree of correlation between an individual railroad's financial health, its ability to invest in physical improvements, and its safety record."

Then comes training. The railroad's rules and safety personnel "continually range" over the 12,000-mile system with the most current audiovisual aids. Formal classroom sessions augment on-the-job training for operating employees, especially locomotive engineers, who are immersed in train-handling instruction.

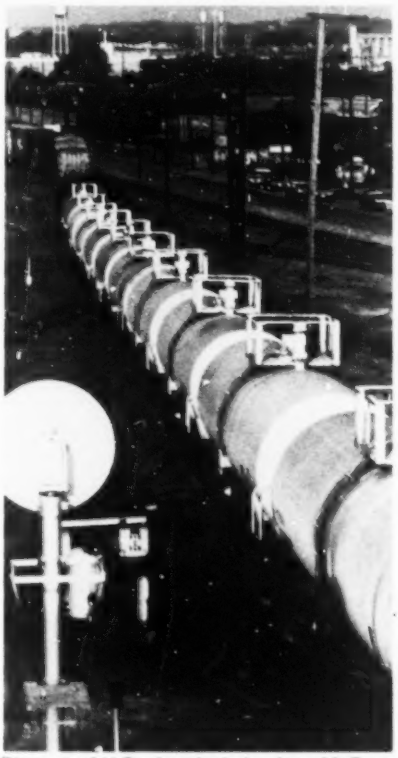
Then there are "stringent" requirements for train movements involving "hazmat." Chemical trains have a maximum of 75 cars, maximum speed of 40 mph, and make extra inspection stops. They have priority over other trains in "meets," and thus avoid switching into sidings. Dangerous carloads get mechanical inspections at origin and are "through-blocked," so removal from trains for switching to others is reduced.

Looming over all such operations is the computer, doing far more on MoPac than providing "hazmat" consists. Taking advantage of the repetitive nature of most hazardous materials, the MoPac computer stores the basic repetitive waybill information for use in compiling all significant data surrounding each movement.

"Today," Gessner says, "we have more than 7,000 patterns in this system, covering all actual and anticipated movements on our railroad. Usually, from 30 to 50 patterns are changed or added daily. Each pattern is carefully monitored by the hazardous materials personnel in our marketing department to make sure that the information is accurate, that the material is properly classified, even that the name of the material is properly spelled. The presense of an 'a' rather than an 'e' can make a substantial difference. Any apparent discrepancy is immediately checked with the shipper, sometimes with two or more shippers where a situation exists that each lists the same material differently.

"This is all very painstaking work requiring many man hours. However, if it prevents a single hazardous materials incident—and I am positive it has—the expense is well worth the effort."

● **Spill prevention as a selling point.** Rounding out the railroad's hazardous materials program are a couple of important staff positions. One is that of director of petrochemicals and hazardous materials, in the marketing department. The other, relatively new, is that of director-chemical sales, filled by Jim McLaughlin, who says safety is MoPac's biggest selling point. "It comes up quite a bit, and there's no question that because of safety there's a good dialogue with chemicals shippers about other things, too."



Biggest of U.S. chemicals haulers, MoPac has an outstanding safety record. But, says President and CEO James W. Gessner, "I take no comfort from these statistics...A single injury, a single death, a single hazardous materials derailment is one too many."

Agreeing with McLaughlin are representatives of several major chemicals producers with big investments in car fleets: Dow, Du Pont, Union Carbide, Stauffer, Hooker, and Cities Service. Granting a general improvement in railroads' performance, these shippers express concern about operating employees' training, and that includes both train and yard personnel.

Keith J. Bunting, Dow general traffic manager, says safety is probably the most carefully analyzed aspect of rail transport, and that, where possible, one railroad's gain in Dow business may be another's loss—because of safety records. Bunting is especially concerned about terminal handling: "The railroads seem to have their greenest employees on those switching jobs because that's where they learn and get experience. I think that's one of the major causes of our problems. You're going to have some human errors from time to time among the most experienced, but I think lack of experience is especially troublesome."

W. F. Gillespie III, Du Pont manager of transportation procurement, agrees: "Yard mishaps are a concern, primarily because almost all can be traced to human error or negligence. Improved training of the train crews and improved track condition are also high on our list."

High on Stauffer Chemical's list, according to George A. Coffenberg, vice president-distribution, is "greater employee training on car handling, particularly in hump yards, and observing speed limitations on curves and other areas where excessive speed could cause a derailment."

"Rough handling of cars in switching and interchange appears to be resulting in spillages, ruptured safety discs, and damage to cars," says Charles P. Rader, Cities Service general manager-distribution department. H. R. Thompson, Union Carbide manager-rail equipment, marine and warehouse services, says: "Classification yards continue to be a concern from both lost-time and safety angles. We will be aware of incidents resulting in significant damage to a car and/or product but may not have knowledge of minor incidents. We are concerned about the cumulative effects of these unknown incidents."

Hooker Chemical's director-transportation and distribution, C. D. Carley, says the biggest step toward improved safety would be better roadbed: "Some carriers have made great strides. Others have a long way to go. We know who the carriers are that are the best equipped to handle our hazardous material safely, and this factor plays a major role in our routing decisions."

● **Damage to shippers' cars.** Related to those comments are others about carriers' handling of damage to shipper cars, both in reporting and accepting liability. Dow's manager-rail fleet administration, Thomas D. Seeley, says railroads seem to be using revised interchange rules to avoid liability: "We're taking a strong position, encouraging other private shippers to take positions with the inter-

Shippers find service and communications with railroads improved as carriers have become more marketing oriented.

change/arbitration committee. We've seen a trend of where our car comes back damaged and a railroad says, 'tough luck.' Well, it's not 'tough luck' because we are concerned with the safety aspect. We believe that any car that's damaged must be repaired as soon as possible, but some railroads seem to think they can get away with marginal damage on a tank car. We're establishing discussions with our major carriers to make sure they understand our position."

W. R. Ziegler, Union Carbide manager-rail carrier transportation, says railroads do a good job repairing minor damage but not all do so well in *reporting* damages: "We can avoid a lot of problems if we are contacted immediately after a major incident to a car so we can participate in the disposition of the product and equipment. Where accountability for damage is clear-cut, the railroads, according to the rules, accept the liability. However, many incidents are neither reported nor is there acceptance of liability without extensive documentation on our part. A substantial number of equipment claims must go through protracted negotiations before settlement occurs. And, settlement does not always imply satisfaction."

● **Shippers find service improved.** Safety concerns permeate shipper comments, but those comments include service and other topics as well—and they generally indicate a good shipper-carrier relationship. They also indicate a changing assessment of railroad performance in other areas.

First, of course, is service. "Union Carbide considers rail service to be gradually improving over the past several years, as railroads were spurred by the ICC to reduce deferred maintenance and legislation was passed to provide government-backed loans," says Zeigler. "Generally, we find main lines in better condition and gateway and connecting service improved. Setbacks do occur as the result of individual railroad management decisions on deployment of power, car supply, and train operations."

Says Du Pont's Gillespie: "Service is better in several instances. Much needed maintenance of right-of-way can temporarily affect service negatively." Rader of Cities Service adds: "Rail service appears to be on an upward trend on most railroads. If improvements continue, service may reach the level that was available five to 10 years ago." And Stauffer's Coffenberg says: "In general, rail service has improved over 1979 when serious power shortages existed. But this is not to mean that rail service should be considered good, that is at a level that would be termed acceptable. Service between key terminal points is generally acceptable, but total movement from origin to destination is less than acceptable unless the destination happens to be located in a key terminal area." For Hooker, Carley says rail service is not up to par, but "we think it has bottomed out, and we're optimistic that better days are coming."

● **Car supply.** What, then, about car supply? Are shippers buying more cars just to compensate for longer cycles? Most additions, Coffenberg answers, resulted from expanded capacity, but: "Each year, rail fleets are sized on at least a two-year sales forecast, and rail service is cranked in as a factor in car turnaround. The factor used in 1978 and early 1979 was greater because of poor service than it had been in previous years." That applies for Hooker, as well, Carley says.

Union Carbide's Thompson, however, says increased cycle times "are predominantly the result of increased use of rail equipment for storage purposes." Those cycle times, along with business growth and shifts to rail from other modes, he says, are behind the growth of Carbide's fleet to nearly 7,000 cars from 5,000 in 1975.

For Cities Service, however, service has been somewhat of a factor, as Charles Rader explains: "The overall fleet is 25% larger than it was five years ago because of a combination of poor rail service and increased shipping volume. It is difficult to assess just how many cars have been added for poor service, because a number of factors must be considered. Some service has improved, some deteriorated, storage track nearer to markets has been leased."

Both Du Pont and Dow see longer car cycles as a major factor in fleet growth, but not the only one. Du Pont's fleet is 15% bigger than it was five years ago; Dow's has grown by about 14% just since 1978.

● **Contract rates?** Would contract rates, now gaining momentum generally, help improve chemicals service? Dow, Du Pont, Hooker, and Carbide say they definitely would. "Our first rail rate and service contract," says Carbide's Ziegler, "became effective with Conrail July 5 and includes transit time standards with penalties for poor time and rewards for better-than-standard time. We consider the contract area of ratemaking tied to service as an opportunity not only for shippers to contract for the quality of service they are willing to pay for, but to introduce the railroads to a whole new concept of doing business, that is, by operating trains to provide good service rather than to achieve lowest cost even if service to the customer has to suffer."

Not surprisingly, then, Ziegler cites Conrail as one road with "recognizable improvement in transit," along with MoPac and Santa Fe, and: "We believe improved communications with the Southern Pacific and Chessie have resulted in better service and quicker resolution of problems." Also citing a railroad is Rader of Cities Service: "The Louisville & Nashville has shown significant improvement over the past three years. Improved track conditions and operating practices have reduced delays and provide for more consistent and dependable service." For Du Pont, Gillespie says "several carriers have improved," without naming them but citing derailment reductions and better attention to hazardous materials. Dow and Hooker are impressed especially with Conrail.

● **Better shipper-carrier relations.** One thing these shippers are unanimous about is that their overall relationships with carriers are clearly better than in the past. "Communications have improved, particularly as carriers have become more marketing oriented," Gillespie says.

Coffenberg adds: "Establishment by many major rail carriers of national account executives specializing in chemicals and having a limited number of accounts has assisted in the identification of problems, joining of the issues, and movement toward a resolution."

Most railroad pricing and marketing departments have chemical industry specialists to manage this segment of their business because "There has been an increasing awareness of the value of chemicals traffic," Ziegler says, pointing out that Union Carbide has worked hard to create that awareness:

"Communications are better now partly because of organizational changes here and the initiative taken by our people to improve them. A program of semiannual meetings with our critical carriers was initiated several years ago and has proven to be very beneficial to both sides. The entire spectrum of shipper-carrier interaction is covered, and carriers have an equal opportunity to discuss their own items of concern."

The most bullish assessment comes from Hooker's Carley: "I see more professionalism in carrier personnel as well as an improved relationship with shippers. I attribute this to more emphasis on training and education. I also sense greater dedication. I don't know why; perhaps the deadwood is being weeded out one way or another. Whatever the reasons, I have a high regard for the carrier personnel I see. They are ready, willing and able." ■

Market

CARLOADINGS

Loadings of revenue freight in the week ended Aug. 2 totaled 429,504 cars, according to the Association of American Railroads. This was a decrease of 44,974 cars, or 9.5%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Aug. 2 are estimated at 17.6 billion, a decrease of 2.5% below the corresponding week of 1979.

REVENUE FREIGHT CARLOADINGS

Commodity	Aug. 2 week	July 26 week
Grain	35,263	32,845
Farm products	4,222	4,621
Metallic ores	27,987	27,990
Coal	112,907	110,796
Crushed stone, gravel & sand	15,026	14,843
Nonmetallic minerals	14,916	15,095
Grain mill products	16,464	17,093
Food and kindred products	18,225	17,098
Primary forest products	20,438	19,776
Lumber & wood products (except furniture)	9,372	8,936
Pulp, paper & allied products	20,617	19,818
Chemicals & Allied products	24,639	24,122
Petroleum products	5,218	5,479
Stone, clay & glass products	15,308	15,349
Coke	4,018	4,343
Metals & products	14,765	13,517
Motor vehicles & equipment	10,180	11,176
Waste & scrap materials	10,015	9,590
Forwarder & shipping aSsn. traffic	10,477	10,039
All other carloads	39,247	39,042
LCL traffic	200	194
Total cars loaded	**429,504**	**421,762**
Cumulative total	1980	1979
31 weeks	**13,458,562**	**14,112,378**
Estimated revenue ton-miles (billions), 31 weeks	**544.8**	**532.6**

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended July 26 totaled 30,167 cars (14.2% below the corresponding 1979 week) and 56,326 trailers or containers (down 9.0% from 1979). Cumulative volume for the first 30 weeks of 1980 is 962,872 (down 10.2% from 1979) and 1,753,933 trailers or containers (down 7.4% from 1979).

CANADIAN CARLOADINGS

Canadian railway revenue freight loaded in the seven-day period ended July 7 totaled 4.9 million tons (down 2.8% from 1979). Cars loaded totaled 69,000 (down 2.0% from 1979). Cumulative loadings for 1980 were up to 136.3 million tons (up 5.4% from 1979).

● *Amtrak.*—Budd Co. has awarded a contract worth more than $5.4 million to WABCO's Westinghouse Air Brake Division for braking and control equipment to be installed on 150 cars Budd is building for Amtrak. The equipment consists of the E-5 Decelostat Wheelslip Control, 26-C/CS-1 Control Equipment and dual friction brake equipment.

● *Missouri Pacific.*—Ordered a hybrid microprocessor/minicomputer system from WABCO's Union Switch & Signal Division to consolidate dispatcher operations at Houston, Tex. The new system uses "miracle" chip technology featuring five US&S Micro 700 microprocessors coupled to a DEC-PDP 11/34A minicomputer. The equipment is to be installed in the spring of 1981.

● *Washington Area Metropolitan Transit Authority.*—Awarded a $2.2-million contract to U.S. Elevator, a Cubic Corp. subsidiary, for the supply and installation of 17 additional elevators for the handicapped. Under six earlier contracts, U.S. Elevator has supplied 102 elevators to WMATA.

● *Freight cars and locomotives.*—The following report has been received from the AAR and the ARCI:

DELIVERED

	June		May	Six months	
	1980	1979	1980	1980	1979
Built new by carbuilders	7,521	7,547	7,484	45,560	41,785
Built new in RR shops	381	492	589	2,779	2,648
Built new—total	7,902	8,039	8,073	48,339	44,433
Rebuilt	106	106	188	901	428
TOTAL DELIVERED	**8,008**	**8,145**	**8,261**	**49,240**	**44,861**
Locomotives (new and rebuilt)	178	159	167	1,033	853

ORDERED

To be built new by carbuilders	3,144	6,639	3,882	22,408	71,417
To be built new in RR shops	0	658	1,862	4,512	1,571
To be built new—total	3,144	7,297	5,744	26,920	72,988
To be rebuilt	0	92	0	865	370
TOTAL ORDERED	**3,144**	**7,389**	**5,744**	**27,785**	**73,358**

ON ORDER AND UNDELIVERED

	July 1		June 1	Average backlog	
	1980	1979	1980	1980	1979
To be built new by carbuilders	71,701	119,335	78,911	90,908	110,260
To be built new in RR shops	7,985	5,234	8,366	6,569	5,643
To be built new—total	79,686	124,569	87,277	97,477	115,903
To be rebuilt	68	29	174	422	115
TOTAL ON ORDER	**79,754***	**124,598**	**87,451**	**97,899**	**116,018**
Locomotives (new and rebuilt)	787	1,012	953	1,086	1,152

*Due to revisions and cancellations, the backlog has been reduced by 2,833 cars.